

what is claimed is:

1. A semiconductor memory device having sense amplifier array blocks between neighboring unit memory cell array blocks in a column direction, the semiconductor memory device comprising:

a first sense amplifier driving line configured by passing the sense amplifiers in a row direction;

10 a second sense amplifier driving line configured by passing the sense amplifiers in a row direction;

a plurality of first NMOS transistors, which are disposed in the sense amplifier array block, for locally performing a pull-up operation of the first sense amplifier driving line in response to a first control signal; and

15 a second NMOS transistor, which is disposed in a hole area, for performing a pull-down operation of the second sense amplifier driving line in response to a second control signal.

2. The semiconductor memory device as recited in claim 1,  
20 wherein the second NMOS transistor has a relatively large size to have a drivability to perform the pull-down operation of the second sense amplifier driving line against a resistance of the second amplifier driving line, and a size of the first NMOS transistor is smaller than that of the second NMOS  
25 transistor.

3. The semiconductor memory device as recited in claim 2,

further comprising a third NMOS transistor, which is disposed in the hole area, for performing the pull-up operation of the first sense amplifier driving line in the response to the first control signal.

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4. The semiconductor memory device as recited in claim 3, wherein the third NMOS transistor has a smaller size than the second NMOS transistor.

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5. The semiconductor memory device as recited in claim 1, wherein each first NMOS transistor is disposed for a set of two sense amplifiers in the sense amplifier array block.

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6. The semiconductor memory device as recited in claim 1, wherein a gate extension direction of transistors configuring the sense amplifiers is substantially perpendicular to a gate extension direction of the first NMOS transistors.

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7. A semiconductor memory device having sense amplifier array blocks between neighboring unit memory cell array blocks in a column direction, the semiconductor memory device comprising:

a first sense amplifier driving line configured by passing the sense amplifiers in a row direction;

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a second sense amplifier driving line configured by passing the sense amplifiers in a row direction;

a plurality of first NMOS transistors, which is disposed

in the sense amplifier array block, for locally performing a pull-up operation of the first sense amplifier driving line in response to a first control signal; and

5 a plurality of second NMOS transistors, which is disposed in the sense amplifier array block, for locally performing a pull-down operation of the second sense amplifier driving line in response to a second control signal.

10 8. The semiconductor memory device as recited in claim 7, further comprising a third NMOS transistor, which is disposed in the hole area, for performing the pull-up operation of the first sense amplifier driving line in the response to the first control signal.

15 9. The semiconductor memory device as recited in claim 8, further comprising a fourth NMOS transistor, which is disposed in the hole area, for performing the pull-down operation of the second sense amplifier driving line in the response to the second control signal.

20 10. The semiconductor memory device as recited in claim 9, wherein the third and fourth NMOS transistor have a smaller size than the first and second NMOS transistor, respectively.

25 11. The semiconductor memory device as recited in claim 9, wherein one first NMOS transistor and one second NMOS transistor are disposed for a set of two sense amplifier in

the sense amplifier array block.

12. The semiconductor memory device as recited in claim  
7, wherein a gate extension direction of transistors  
5 configuring the sense amplifiers is substantially  
perpendicular to a gate extension direction of the first and  
second NMOS transistors.